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RITTER, LANG & KAPLAN 12930 SARATOGA AE. SUITE D1 SARATOGA, CA 95070			QUAN, ELIZABETH S	
			ART UNIT	PAPER NUMBER
			1743	

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/691,421

Applicant(s)

ZHOU ET AL.

Examiner

Elizabeth Quan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10, 12-21 and 23-34 is/are pending in the application.
- 4a) Of the above claim(s) 15-18 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10, 12-14, 19-21 and 23-29 is/are rejected.
- 7) ☒ Claim(s) 21 and 24-26 is/are objected to.
- 8) ☒ Claim(s) 1-10, 12-21 and 23-34 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. This application contains claims directed to the following patentably distinct species of the claimed invention: Species 1, which consists of claims 1-10, 12-14, 19-21, and 23-29, is directed toward the embodiments of either figures 1 or 6. Note that claim 1 requires that either the sealing device or the periphery of the reaction wells formed in the base to have the chamfered ridges. Species 2, which consists of claims 15-18 and 30-34, is directed toward the embodiment of figure 5. Note that claim 30 requires that the vessels received in the wells of the base to have chamfered periphery edge.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claim is generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

2. During a telephone conversation with Cindy S. Kaplan on 4/23/2004 a provisional election was made with traverse to prosecute the invention of I, claims 1-10, 12-21, and 23-29. Affirmation of this election must be made by applicant in replying to this Office action. Claims 30-34 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Objections

4. Claims 21 and 24-26 are objected to because of the following informalities: "sealing cap" should be plural. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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6. Claims 3-5 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the base formed from a material harder than the sealing device when the base has the chamfered ridges, does not reasonably provide enablement for the base formed from a material harder than the sealing device when the sealing device has the chamfered ridges. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. The use of alternate language in claim 1 from which claim 21 depends produces embodiments, which are not enabled by the disclosure. For example, the instant specification states that when the chamfered ridges are formed in the sealing device rather than the base member, the sealing plate will be formed from a harder material than the base.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claims 6, 19, 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 6 and 19 are confusing since claim 6 recites that the cover is positioned over the sealing device and claim 19 recites that the sealing device includes a cover configured for attachment to the base. In one claim the cover is part of the sealing device, and in another claim the cover is a separate entity from the sealing device.

10. Claim 20 recites the limitation "the vessels" in the last line. There is insufficient antecedent basis for this limitation in the claim. Additionally, it is unclear what embodiment this claim is directed to. The openings for receiving bolts are shown fig. 1, but in this embodiment it

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is unclear if the sealing device or cover ever contacts the upper ends of the vessels or wells. In fig. 5 there are no openings for bolts, and it is unclear if the upper ends of the vessels come into contact with the cover.

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1, 3, 5-8, 13, 19-21, 23, 24, 26-29 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,149,882 to Guan et al. or U.S. Patent No. 6,395,552 to Borade et al.

The applied reference has a common assignee but only one common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Guan et al. disclose an apparatus (150) for use in parallel reaction of materials (figs. 9 and 10; col. 9, line 45-col. 12, line 12). The apparatus is configured for use as a batch or fixed bed reactor (figs. 8-10). A base (154) has a plurality of reaction wells (184) formed therein (figs. 9 and 10).

A sealing device (156,202) comprising a plurality of sealing caps (202) is positioned over the reaction wells for individually sealing each of the reaction wells (figs. 9 and 10). The ends of the sealing caps have chamfered ridges (204) extending generally around a periphery of each of the plurality of reaction wells (figs. 9 and 10). The sealing caps are spring-biased against the base through the copper gasket (figs. 9 and 10). Page 15, lines 2-4 of the instant specification discloses, "A gasket (100) formed for a soft material such as copper, nickel, tin, or aluminum seated in a groove (102) machined in the base (82) to form a contact surface of the base." In the same manner, a copper gasket (206) is seated in a groove (208) on the base around the periphery of the reaction wells to form a contact surface of the base (col. 10, lines 36-39). Since the chamfered ridges cut into the copper gasket, the copper gasket is softer than the material of the chamfered ridges, which is part of the sealing caps (figs. 9 and 10; col. 10, lines 36-39). The action of the chamfered ridges cutting into the copper gasket creates a knife-edge seal between the sealing device and the base when the sealing device and the base are forced into contact with one another through the copper gasket (figs. 9 and 10).

Additionally, chamfered ridges (204) are machined into the base (154) (figs. 9 and 10; col. 10, lines 36-39). In this perspective, the sealing device may include the copper gasket along with the sealing caps and cover (156) (figs. 9 and 10). Since the base cuts into the copper gasket, the base is formed from a material harder than the sealing device (figs. 9 and 10). The cover

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(156) with sealing caps is configured for attachment to the base (figs. 9 and 10). Each of the cover with sealing caps and base comprise a plurality of aligned openings for receiving bolts (194) used to attach the cover with sealing caps to the base and force the cover with sealing caps into contact with the upper end of the vessels seated in the wells (figs. 9 and 10).

A cover (156) is positioned over the sealing device (figs. 9 and 10). The cover is configured for attachment to the base (figs. 9 and 10). Each of the cover and base has a plurality of aligned openings for receiving bolts (194) to attach the cover to the base and force the sealing device into contact with the base (figs. 9 and 10; col. 10, lines 26-29). The base is generally rectangular in shape (fig. 8). A plurality of liquids and fluids flow through vessels (12) positioned within the reaction wells (figs. 9 and 10). Each of the vessels has chamfered ridges (figs. 9 and 10; col. 31-34). Since the “up” and “down” positions have not been defined in the instant claims or specification, the “up” position may be considered the “down” position depending on one’s point of view, such that the end (190) of the vessels which has the chamfered ridges can be considered the open *upper* end. The vessels may be made of stainless steel (col. 10, lines 18-21).

Borade et al. disclose the same invention as Guan et al. Figures 9 and 10 are the relevant figures, and col. 10, line 49-col. 13, line 17 are the relevant portions of the specification.

Claim Rejections - 35 USC § 103

13. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 2, 4, 9, 12, 14, and 25 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 6,149,882 to Guan et al. or U.S. Patent No. 6,395,552 to Borade et al. in view of WO 98/36826 to Wendelbo et al.

The applied reference has a common assignee but only one common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104,

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together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Guan et al. and Borade et al. do not address the material the base or sealing cap is made. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to construct the base of Guan et al. or Borade et al. from stainless steel it is often used to construct parallel reactors based on its durability, strength, compatibility with chemicals, and resistance to high pressures as taught by Wendelbo et al.

Guan et al. and Borade et al. do not explicitly disclose at least 100 wells in the base. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include at least 100 reaction wells in the base of Guan et al. or Borade et al. to accommodate the desired or necessary number of reactions to be performed simultaneously for high-throughput. Additionally, it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)).

Guan et al. and Borade et al. do not address the internal volume of the reaction wells. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the reaction wells of Guan et al. or Borade et al. with an internal volume of about 10 to 500 microliters to optimally accommodate starting materials and products of a reaction. Additionally, it has been held that discovering an optimum value of a result

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effective variable involves only routine skill in the art (*In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980)).

Guan et al. and Borade et al. do not disclose a circular base. However, it would have been obvious to one having ordinary skill in the art to have changed the shape of the base since it has been held that the configuration of a container is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed container was significant (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) and MPEP 2144.04 (II,iv,b)).

16. Claims 1-10, 12, 13, 19-21, 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/36826 to Wendelbo et al. in view of U.S. Patent No. 5,224,658 to Smith and/or U.S. Patent No. 6,602,714 to Tagge et al. and/or JP 58035220 to Koga and/or U.S. Patent No. 6,165,417 to Swierkowski.

Wendelbo et al. disclose an apparatus for use in a parallel reaction block comprising a base (2) with a plurality of wells (1) (e.g. 10-10,000 wells from 0.2 to 2 ml). The wells are through-going perforations or holes permanently closed at one end. The block can be made from stainless steel, aluminum, titanium, PEEK, other rigid material (see PAGE 5, lines 36-PAGE 6, lines 10, PAGE 7, lines 5-9). The apparatus comprises sealing means positioned over the wells for individually sealing each of the wells. The sealing means can be fastened on either of the covers (7a) or (7b), polymer film (3), or thin metal plate (see PAGE 7, lines 23-25). The sealing means can be balls (4) (e.g. sealing caps), conical, or hemispherical protrusions that fit into the wells (see PAGE 7, lines 24-30). The balls may be made of materials, such as steel or glass, and the supporting layer in which the balls are attached may be made of a polymer such as Teflon or

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metal plates. Alternatively, Wendelbo et al. teach the base (2) machined or fastened with sharp protrusions (14) (see PAGE 7, line 31-PAGE 8, line 3). The sharp protrusions (14) could alternatively consist of rings or rectangular grid that are either welded onto the central block (2) or fastened by any other suitable method (see PAGE 7, lines 31-38; PAGE 8, lines 1-3). The base comprises a plurality of aligned openings for receiving bolts (11) used to attach the cover to the base and force the sealing device into contact with the base (see FIG. 3). The multiautoclave may alternatively be closed by pressing the plates against each employing a clamping or squeezing mechanism that makes through-going bolts unnecessary (see PAGE 8, lines 5-12). Additionally, the sealing means may be spring-biased (see PAGE 8, lines 10-13).

Wendelbo et al. disclose the base with chamfered ridges extending generally around a periphery of each of the reaction wells. Wendelbo et al. do not explicitly disclose the sealing device with a metal contact surface. Smith discloses an autosampler (10) with an upper housing (27) and lower housing (28) with a seal (30), which can be an oxygen-free high-conductivity copper gasket to form an evacuable chamber (60) therebetween (col. 6, lines 9-12). Housings (27,28) can be adapted with knife edges for sealing by engaging the seal (col. 6, lines 17 and 18). Tagge et al. disclose typical useful materials used for gaskets applied around each well include gold and copper (col. 12, lines 6 and 7). Koga discloses that copper gaskets are low cost sealing materials (English abstract). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a copper gasket in the apparatus of Wendelbo et al. such that the chamfered ridges of the base come into contact with the copper gasket in order to provide a low-cost, commercially available, and effective sealing material as taught by Smith or Tagge et al. or Koga. Additionally, it would have been obvious to one having

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ordinary skill in the art at the time the invention was made to omit the polymer gasket of Wendelbo et al. such that the chamfered ridges of the base comes into contact with the aluminum plates (7a,7b) since it is an alternative effective sealing method providing the different advantages of using less structural elements for manufacturing ease and lesser cost.

17. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 98/36826 to Wendelbo et al. in view of U.S. Patent No. 5,224,658 to Smith and/or U.S. Patent No. 6,602,714 to Tagge et al. and/or JP 58035220 to Koga and/or U.S. Patent No. 6,165,417 to Swierkowski.

Wendelbo et al. in view of Smith and/or Tagge et al. and/or Koga and/or Swierkowski disclose a base that is rectangular in shape but fail to disclose a circular base. However, it would have been obvious to one having ordinary skill in the art to have changed the shape of the base since it has been held that the configuration of a container is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evident that the particular configuration of the claimed container was significant (*In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966) and MPEP 2144.04 (II,iv,b)).

Response to Arguments

18. Applicant's arguments with respect to claims 1-10, 12-14, 19-21, and 23-29 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth Quan whose telephone number is (571) 272-1261. The examiner can normally be reached on M-F (8:00-4:30).


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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Elizabeth Quan
Examiner
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